

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number  
**WO 2004/083081 A3**

(51) International Patent Classification<sup>7</sup>: **B60P 1/64**

(21) International Application Number:  
PCT/US2004/008080

(22) International Filing Date: 17 March 2004 (17.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/455,149 17 March 2003 (17.03.2003) US

(71) Applicant (for all designated States except US):  
**OSHKOSH TRUCK CORPORATION** [US/US];  
2307 Oregon Street, Oshkosh, WI 54902 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ZHOU, Zhendong**  
(Mike) [US/US]; 7921 West Rolling Field Drive, Mequon,  
WI 53097 (US). **YANACEK, Michael** [US/US]; 356 West  
19th Avenue, Oshkosh, WI 54902 (US). **MORROW, Jon,**  
J. [US/US]; 1224 Kampo Court, Neenah, WI 54956 (US).  
**GULLICKSON, James** [US/US]; 2006 Kelly Street, Lit-  
tle Chute, WI 54140 (US).

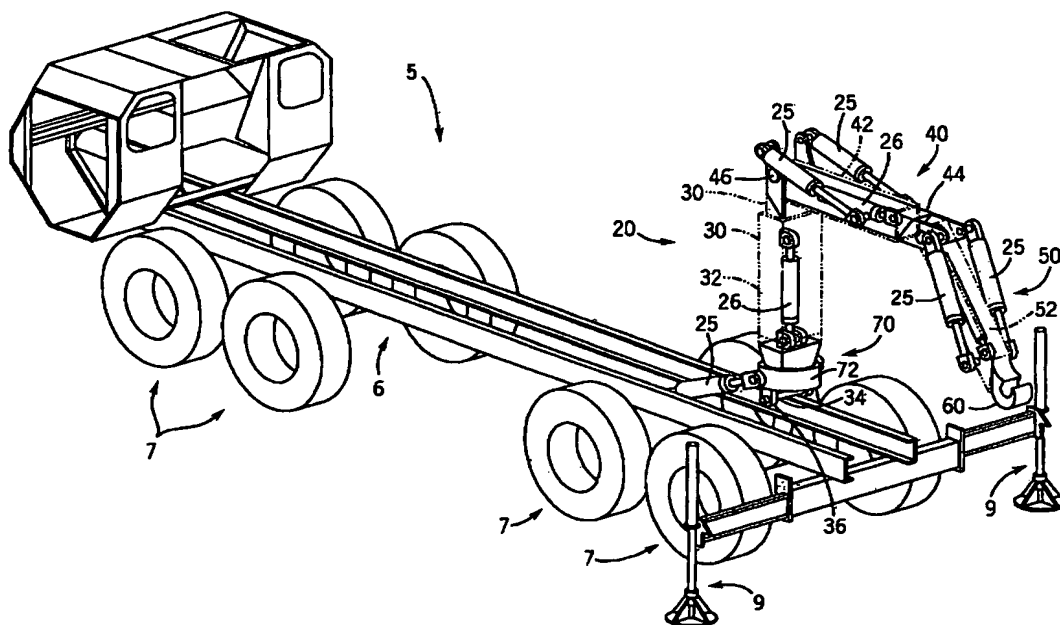
(74) Agent: **WILKE, James, A.**; Foley & Lardner LLP, 777  
East Wisconsin Avenue, Suite 3800, Milwaukee, WI  
53202-5306 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ROTATABLE AND ARTICULATED MATERIAL HANDLING APPARATUS



(57) Abstract: A material handling apparatus (20) for mounting on a support structure. The material handling apparatus (20) comprises a telescopic riser portion (30) coupled to the support structure. A telescopic boom portion (40) is coupled to the riser portion. A telescopic jib portion (50) is coupled to the boom portion. A hook is coupled to the jib portion. A control apparatus is coupled to each of the riser (30), boom (40), and jib (50) portions. Wherein, each of the telescopic portions can be independently, selectively moved in a push-pull mode to manipulate material.

**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,

LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

**Published:**

— with international search report

**(88) Date of publication of the international search report:**

9 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/008080

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B60P1/64

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B60P B66C E02F B25J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | PATENT ABSTRACTS OF JAPAN<br>vol. 1996, no. 09,<br>30 September 1996 (1996-09-30)<br>& JP 8 132364 A (TOSHIBA CORP),<br>28 May 1996 (1996-05-28)<br>abstract | 1-16                  |
| Y          |  | 17-19                 |
| Y          | EP 0 634 304 A (MELBOURNE HYDRAULIC EQUIP)<br>18 January 1995 (1995-01-18)<br>column 6, line 18 - line 23; figures   | 17-19                 |
| A          | NL 7 702 392 A (SMOLDERS VERHOOSSEL BV)<br>11 September 1978 (1978-09-11)<br>page 2, line 27 - page 4, line 1; figures                                       | 18, 19                |
| A          | DE 94 21 147 U (ROLLFRACHT SPEDITION &<br>TRANSP0) 29 June 1995 (1995-06-29)   |                       |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*A\* document member of the same patent family

Date of the actual completion of the international search

13 September 2004

Date of mailing of the international search report

20/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Nordlund, J

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/008080

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date                                  |
|---|---|---------------------|----------------------------|--|
| JP 8132364                                | A | 28-05-1996          | NONE                       |  |
| EP 0634304                                | A | 18-01-1995          | AU<br>EP                   | 6749494 A<br>0634304 A1                              |
|   |   |                     |                            | 27-01-1995<br>18-01-1995                             |
| NL 7702392                                | A | 11-09-1978          | NONE                       |  |
| DE 9421147                                | U | 29-06-1995          | DE<br>DE<br>AU<br>WO       | 4324195 A1<br>9421147 U1<br>7226594 A<br>9502522 A1  |
|   |   |                     |                            | 19-01-1995<br>29-06-1995<br>13-02-1995<br>26-01-1995 |